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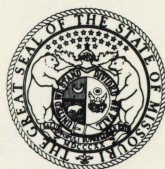
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1990 ANNUAL REPORT



EIERA
Environmental Improvement and Energy Resources Authority





*G. Tracy Mehan III
Director
Missouri Department of Natural Resources*

Dear Citizens:

During the 1980s, the assistance provided by the Environmental Improvement and Energy Resources Authority (EIERA) proved to be vital as the Missouri Department of Natural Resources addressed important environmental challenges.

During the early 1980s, the EIERA arranged bond financing to municipalities and industries to construct or improve wastewater treatment systems. More recently, the EIERA was instrumental in developing the State Revolving Fund, which effectively carries out the national mandate to make low interest money available to municipalities for wastewater treatment facilities.

During the middle portion of the decade, the EIERA focused on the management of solid waste and hazardous waste. The Resource Recovery Feasibility and Planning Study aided in the structuring of important solid waste legislation, notably House Bill 438 and Senate Bill 530. The Authority funded the Household Hazardous Waste Project, a Springfield-based public education program, and established the Missouri Waste Exchange, a service that allows companies to identify and exchange waste products for reuse. Near the end of the decade, the EIERA awarded a grant to the Missouri Energy Resources Project in St. Louis, which teaches young people about energy conservation and recycling.

The Authority also has assisted with maintaining high standards for water quality. In 1988, the Authority helped achieve department goals of water quality protection and soil conservation by assisting Wright County dairy farmers with environmentally sound methods to manage animal waste.

As we enter a new decade, the EIERA has already embarked upon several new and innovative projects. The department will continue to rely on the EIERA's financial and educational resources to help us prevent pollution and protect Missouri's citizens and environment.

Very truly yours,

DEPARTMENT OF NATURAL RESOURCES

A handwritten signature in black ink that reads "G. Tracy Mehan III". The signature is written in a cursive, flowing style with a large, stylized "G" and "M".

G. Tracy Mehan III
Director



Jolly Mill Park and its adjacent mill are listed on the National Register of Historic Places. The park is seven miles southwest of Pierce City; it offers visitors numerous opportunities for recreational and cultural activities.

The 1990 Annual Report of the Environmental Improvement and Energy Resources Authority is published as a service to the citizens of the state of Missouri, and as a public record of the activities and programs administered during fiscal year July 1, 1989, through June 30, 1990.

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Cover: *Ha Ha Tonka State Park, near Camdenton, is a scenic masterpiece located in the Osage River hills. In the park are the remains of a huge stone castle which adds an air of romance to the richly wooded setting.*

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This annual report is printed on recycled paper.



A Message from the Chairman



On April 22, 1990, people living in large urban centers and small rural communities celebrated the twentieth anniversary of Earth Day. They demonstrated a strong commitment to the environmental agenda and the challenges that will be faced in the year 2000 and beyond.

In Missouri, the Environmental Improvement and Energy Resources Authority (EIERA) captured the spirit of Earth Day by supporting several local events. It also renewed the ideals of Earth Day by continuing to develop and promote sound environmental management programs.

This past year was characterized by the Authority's efforts to establish new financial assistance programs and provide funding to innovative projects.

Two water-pollution control financial programs are being established by the EIERA. The State Revolving Fund is the result of a united effort by the Authority, the Department of Natural Resources and the U.S. Environmental Protection Agency; it will provide assistance for the construction of sewage and wastewater treatment plants. The second program, which is being developed in cooperation with the Missouri Public Service Commission, will provide low-cost loans to private water companies for the construction of new wastewater treatment projects.

The Missouri General Assembly set aside one million dollars per year, for the next five years to promote and develop recycling programs and encourage industrial use of recycled materials. The EIERA, the Department of Natural Resources, and the Department of Economic Development will determine how Missouri projects will be funded.

One of the significant accomplishments of the past year was a \$52,000 grant awarded to Crowder College in Neosho. This grant was

used to meet operational and personnel costs in the construction of a solar car; the students and staff at Crowder College are nationally recognized for their expertise in the design and engineering of solar-powered vehicles.

Another highlight of the past year was the announcement of a national award for EIERA's Household Hazardous Waste Project (HHWP). The National Environmental Awards Council, an organization of 23 major environmental advocacy groups, presented HHWP an award in the category of hazardous materials reduction and recycling. Project director Sondra Goodman accepted the award at the National Press Club in Washington, D.C.

In March and April, the EIERA's Missouri Assistance Program (MAP) sponsored three regional workshops to assist local officials in planning, financing, and managing solid waste and wastewater projects. More than 165 community leaders and technical consultants attended the workshops.

During the year, the Authority and its staff have had the opportunity to work with exceptional people from both small towns and urban areas and representatives from business, industry, and government.

We have enjoyed serving the state of Missouri in the area of environmental affairs. We thank you for your encouragement and vote of confidence in our mission and stewardship.

Sincerely,

ENVIRONMENTAL
IMPROVEMENT
AND ENERGY RESOURCES
AUTHORITY

William H. Clark
William H. Clark
Chairman

Household Hazardous Waste Project Wins National Award



Sondra Goodman (third from left), director of EIERA's Household Hazardous Waste Project (HHWP), stands on the White House lawn with President George Bush, actor/singer John Denver, and several award recipients. Goodman was congratulated by Bush after receiving an award from the National Environmental Awards Council for HHWP's hazardous materials reduction and recycling efforts.

Marie Colvin
Administrative Assistant

Tom Weber
Award Presentation &
Project Management

Kenneth W. ...
Public ...

Members of the EIERA



William H. Clark, *Chairman*

William Clark has been president of the Urban League of Greater Kansas City since 1977. The Urban League offers programs that focus on career education, community planning and research, employment, and training.

Clark is past president of the United Way Area Executives Association and serves on several boards, including the Greater Kansas City Chamber of Commerce, Truman Medical Center, NAACP, Starlight Theatre, and Kansas City Power and Light. Additionally, he has been a member of the Advisory Council-National Alliance of Business and the Private Industry Council.

Clark earned a bachelor of arts degree in political science and economics from Indiana University. He received a master of divinity degree from Central Theological Seminary, Indiana, and the doctor of divinity degree from Central America University in Missouri. He holds the doctor of laws degree from Monrovia College, Liberia, and has studied at the Harvard Graduate School of Business.

Clark was appointed to the Authority in January 1987. He and his wife have one son; they reside in Lee's Summit.

H. Dwight Douglas, *Vice Chairman*

Dwight Douglas is a partner in the Neosho law firm of Douglas, Douglas, and Johnson. He was appointed to the Authority for a three-year term by Gov. John Ashcroft.

Douglas received his bachelor of arts and juris doctorate degrees from the University of Missouri-Columbia. A Distinguished Military Graduate, he was awarded the U.S. Army's Vietnam Service Medal for meritorious service in Thailand.

A former member of the Governor's Dioxin Task Force (1983), Douglas is involved in various civic and community activities. He is a past member and former president of the Southwest Missouri State University Board of Regents and a former member of the Neosho City Council. He also provides legal advice for a drug-abatement organization that assists law-enforcement agencies.

Douglas is a member of the Missouri Bar, the Missouri Trial Lawyers Association, the Association of Trial Lawyers of America, and the Missouri Municipal and Associate Judges Association.



David R. Goller, *Secretary-Treasurer*

David Goller was appointed to the Authority in August 1987, by Gov. John Ashcroft to serve a three-year term. He was elected secretary-treasurer in October, 1987.

Goller is a partner in the Jefferson City law firm of Goller & Kuebler. He is a member of the American, Missouri, and Cole County bar associations.

Involved in numerous community activities, Goller is a member of the Jefferson City Chamber of Commerce and the Cole County Planning Commission. He also serves on the board of directors of the Exchange National Bank. He is a past board member of the Memorial Community Hospital and the American Red Cross.



Kenneth S. Kranzberg, *Member*

Kenneth S. Kranzberg was appointed to a three-year term by Gov. John Ashcroft and will serve on the Authority until Jan. 22, 1992.

Since 1978, Kranzberg has been president of the St. Louis-based Northwestern Bottle Co. Northwestern is the largest distributor of glass and plastic bottles in the United States, with offices and warehouses in 12 cities. He is past president and board chairman for the National Association of Container Distributors.

A graduate of the College of William and Mary in Virginia, Kranzberg also served in the U.S. Army as a second lieutenant.

Kranzberg is active in civic and community activities and served as a board member for several St. Louis-area companies and charitable institutions. He, his wife, and two daughters live in St. Louis County.

John D. Schaffer, *Member*

John David Schaffer was appointed to the Authority by Gov. John Ashcroft and confirmed by the Missouri Senate on January 17, 1990.

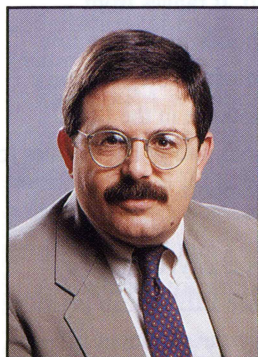
Schaffer owns and operates a family farm near LaGrange; he raises beef cattle and grows corn, soybeans and wheat. He is also president of Brambaugh, Inc., a family-owned company that sells fertilizer, seed, and agricultural chemicals.

A graduate of the University of Missouri-Columbia, Schaffer earned a bachelor of science degree in agriculture.

Schaffer has been active in local and state organizations for several years. He is vice president of the Lewis County Farm Bureau and secretary-treasurer of the Missouri Soybean Merchandising Council. He is a member of the Missouri Farm Bureau, Missouri Corn Growers Association, and the Lewis County Port Authority.



EIERA Staff



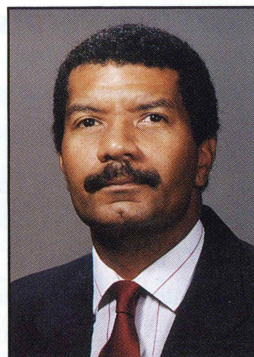
Stephen M. Mahfood
Director



Marie Colvin
Administrative Assistant



Tom Welch
*Asst., Planning &
Project Development*

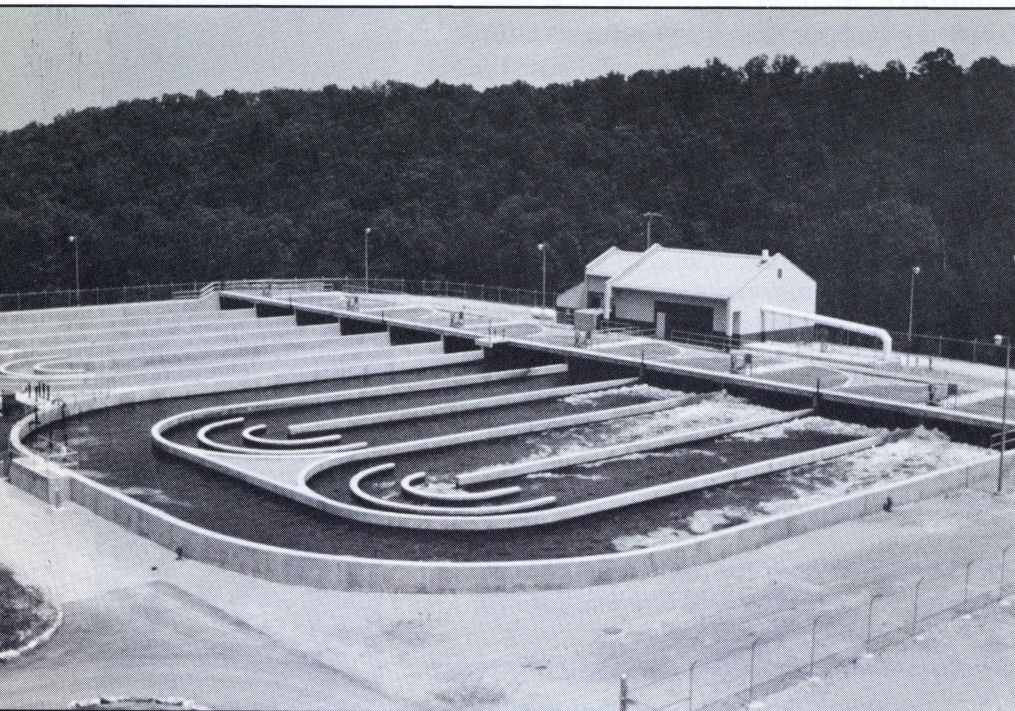


Kenneth Seeney
*Asst., Planning &
Public Affairs*



Faye Alberts
Secretary

The EIERA — An Overview of its History and Purpose



Since 1972, EIERA's loan programs have provided more than \$1 billion in funding to cities, counties, and districts for constructing or improving sewage and wastewater treatment facilities.

The Authority is completely self-supporting, and the fees it charges to applicants for financing are sufficient to meet EIERA's operating expenses. It does not receive state funding from the Missouri General Assembly.

The Environmental Improvement and Energy Resources Authority (EIERA) is an independent agency created in 1972 by the Missouri legislature. The Authority's mandate is to provide low- or no-cost financing for projects that would reduce, control, and prevent environmental pollution, and to encourage research and development of energy alternatives while promoting economic development.

Legislation in the early 1980s transferred the EIERA to the Missouri Department of Natural Resources and added major new responsibilities to the Authority's operations.

Although the EIERA's traditional method of financing has been through issuance of tax-exempt-interest industrial revenue bonds, the Authority's mandate is broad. It ranges from financing projects through tax-exempt bonds to making low-cost loans and offering construction financing, to conducting studies and also providing technical assistance in the field. EIERA staff also meets with organizations and public entities to discuss available programs that would support their environmental objectives.

Whether it's a large or small business, a city, county or municipality, port or bridge authority, the EIERA can provide assistance for pollution-control or energy-development projects.

The EIERA authorized its first bond project in December 1973 and since that date has issued tax-exempt bonds, notes, and commercial paper in excess of \$1.8 billion. The bonds are repayable solely by the entities that construct the projects; the state of Missouri does not guarantee repayment. Since the

Authority issues the bonds and because the bonds meet certain requirements in the Internal Revenue Code, interest from the bonds is exempt from federal income taxes.

The EI ERA has also developed a number of innovative programs and projects. Two of these have been developed to assist communities in meeting wastewater-treatment and sanitary sewer guidelines. The Grant Anticipation Note (GAN) program, which began in 1982, provides low-cost construction financing for projects that will receive funding from the U.S. Environmental Protection Agency (EPA). The second program, known as the Construction Advance Program (CAP), also provides low-cost construction financing for communities that have arranged Farmers Home Administration loans.

In both cases, the EI ERA issues bonds, and then loans the proceeds to applicants for construction costs. This simplifies the initial project phase and aids in reducing overall project costs. If managed as in the past, these arrangements become either low-interest or interest-free loans.

Unfortunately, federal grant programs administered by the EPA will be discontinued. The GAN and CAP programs and similar direct loan programs will be replaced by a single State Revolving Fund (SRF), administered by individual states, in cooperation with EPA.

The EI ERA, Missouri Clean Water Commission, Missouri Department of Natural Resources, and EPA, have worked together to establish the SRF. This program will provide an 85 percent loan and a 15 percent grant to Missouri cities, counties, and districts for construction of sewage and wastewater treatment projects.

The EI ERA is also developing another financial assistance program in cooperation with the Missouri Public Service Commission. This program will offer low-cost loans to private water and sewer companies for construction of new wastewater projects in Missouri.

Additional programs and projects that have been developed include:

- A seven-volume statewide study of solid-waste issues, and recommendations for possible implementation at the state, regional, or local levels;
- A statewide survey to determine the public's views on solid-waste-management issues;



In 1986, the Missouri Waste Exchange Service was established to assist local companies. It provides a computer listing, free-of-charge, to help identify available waste products that are reusable in the manufacturing process.

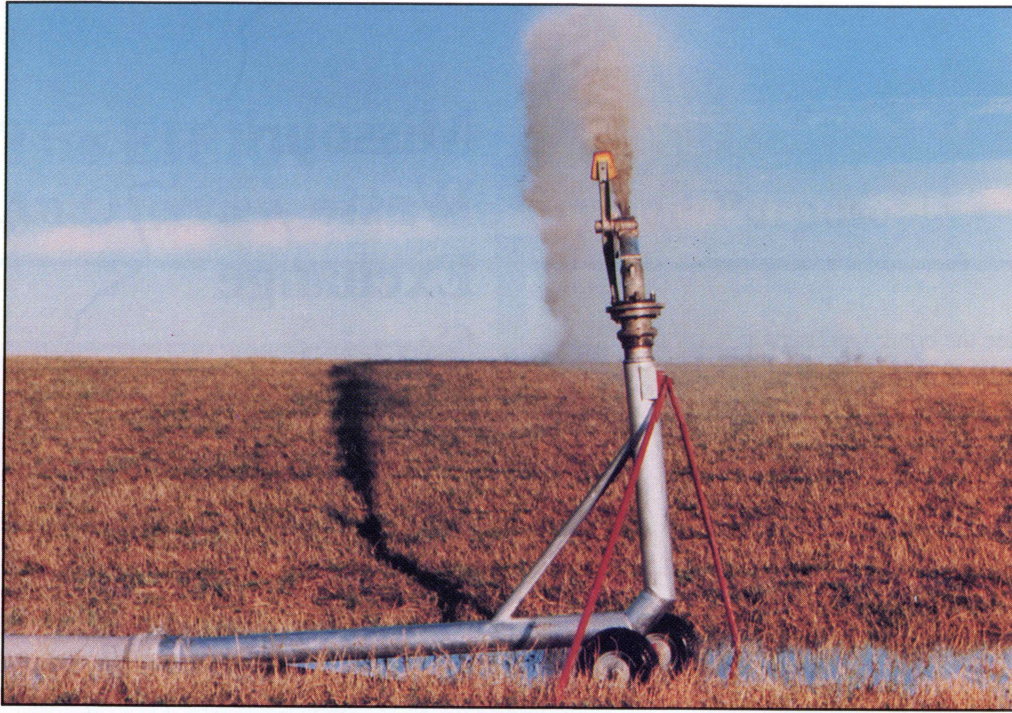
- An education and training program for Missouri businesses that encourages waste minimization and energy conservation;
- Funding a pilot recycling project in Kansas City;
- Funding local studies to determine feasibility of environmental and energy-development activities; and
- Conducting studies on hazardous-waste issues for large and small-quantity generators and households.

An ongoing task of the EI ERA is to develop alternative methods of financing for environmental programs and energy-development projects.

Financing may be obtained for solid-waste, sewage, and water-pollution control projects and facilities. Also considered for assistance are projects that focus on energy conservation through the use of wind, water, and solar power, synthetic fuels, and energy produced from Missouri coal, heavy oil, and tar sands. Other requirements are established as programs develop.

One important advantage of EI ERA financing is that most programs are arranged through low-cost funding alternatives, thereby substantially reducing project costs.

Because of the legislative mandate to provide assistance, the EI ERA does not perform a regulatory role. The Authority's financial programs and assistance are, therefore, available only upon request. The Authority is completely self-supporting, and the fees it charges to applicants for financing are sufficient to pay the Authority's operating expenses.



Funding from EIERA and other agencies has helped Wright County farmers reduce soil erosion and protect water quality by implementing waste management techniques. These techniques include applying animal waste to fields and constructing waste collection units at several farms.

The Year in Review

This past year, the Missouri Environmental Improvement and Energy Resources Authority (EIERA) has provided technical and financial assistance in support of research and educational projects. These efforts have enhanced environmental management and encouraged development of energy alternatives.

Specifically, the Authority has developed new loan programs, supported ongoing projects, sponsored conferences and workshops, and provided information and testimony on key state and national environmental and energy issues.

Additionally, the Authority has responded to more than 300 public inquiries for assistance and information.

New Projects

During fiscal year 1990, the Authority provided assistance for new programs and innovative projects.

Crowder College, based in Neosho, Missouri, is nationally recognized for the engineering and design of solar-powered vehicles. This year, the Authority awarded a **\$52,000** grant to help meet operational and personnel costs in the construction of the STAR II solar car. STAR II is the third solar-powered vehicle developed by Crowder students and faculty.

This past year, in cooperation with the Missouri Public Service Commission, the EIERA began establishing a framework for a new financial assistance program. This program will offer low-cost loans to Missouri's private water and sewer companies to construct new wastewater treatment facilities.

The Authority also approved a project refinancing from a past issuance. The Union Electric Company refinanced a previous issue in the amount of **\$60** million. Company officials will use the funds to purchase pollution control equipment and upgrade waste management facilities at several Union Electric sites in Missouri.

Ongoing Projects

This past year, the EIERA's Household Hazardous Waste Project (HHWP) received an award from the National Environmental Awards Council (NEAC) for outstanding achievement in the category of hazardous materials reduction and recycling.

The HHWP services a 23-county area and is based at Southwest Missouri State University in Springfield. It was established in 1986 to educate citizens about the safe management and disposal of household chemicals and products. During that period, it has received three grants totaling **\$278,000**. This past year the project received funding assistance in the amount of **\$128,000**.

The city of Springfield will be the first project participant under the new State Revolving Fund (SRF). The SRF is a loan/grant program that will provide financial assistance to cities, counties, and districts for construction of wastewater treatment facilities. The SRF has been developed over a three-year period in

cooperation with the Department of Natural Resources, the Missouri Clean Water Commission, and the U.S. Environmental Protection Agency.

The Authority invested a great deal of staff time and legal expertise in developing portions of the SRF program. This program is expected to meet water and wastewater financing needs into the 21st century and could eventually yield over \$1 billion in benefits to Missouri.

The Missouri Assistance Program (MAP), now in its fourth year, received a **\$99,000** grant from the EIERA. MAP provides technical and management assistance to rural communities in an effort to develop efficient wastewater treatment facilities and solid waste management systems. This past year, MAP held regional workshops in Sikeston, Macon, and Cameron to discuss project planning and management with community leaders. More than 160 local officials and technical consultants attended the workshops.

Two years ago, the EIERA approved a **\$12,391** grant for the St. Louis-based Missouri Energy Resource Project. This program continues to provide an opportunity for Missouri's educators to learn innovative approaches for teaching students about recycling, energy conservation, and other environmental issues.

One of the most innovative projects in the state is being administered by officials in Wright County. Two years ago, the Wright County Soil and Water Conservation District received a **\$70,095** EIERA grant to fund demonstration

projects and to purchase mechanical and pumping equipment. This equipment will help dairy farmers reduce soil erosion and protect water quality by employing waste management techniques and constructing waste collection systems. This five-year program is a cooperative effort supported by several local, state and federal agencies and will continue as projects are completed at various sites.

The Missouri Waste Exchange Service provides information to Missouri businesses and companies wanting to identify and exchange waste products for reuse in the manufacturing process. The Missouri service is affiliated with the Industrial Material Exchange Service in Springfield, Illinois. This cooperative program provides direct technical assistance and a computerized listing of wastes available for exchange to Missouri manufacturers.

The Authority also has maintained its Grant Anticipation Program (GAN) and Construction Advance Program (CAP). These programs have provided ongoing

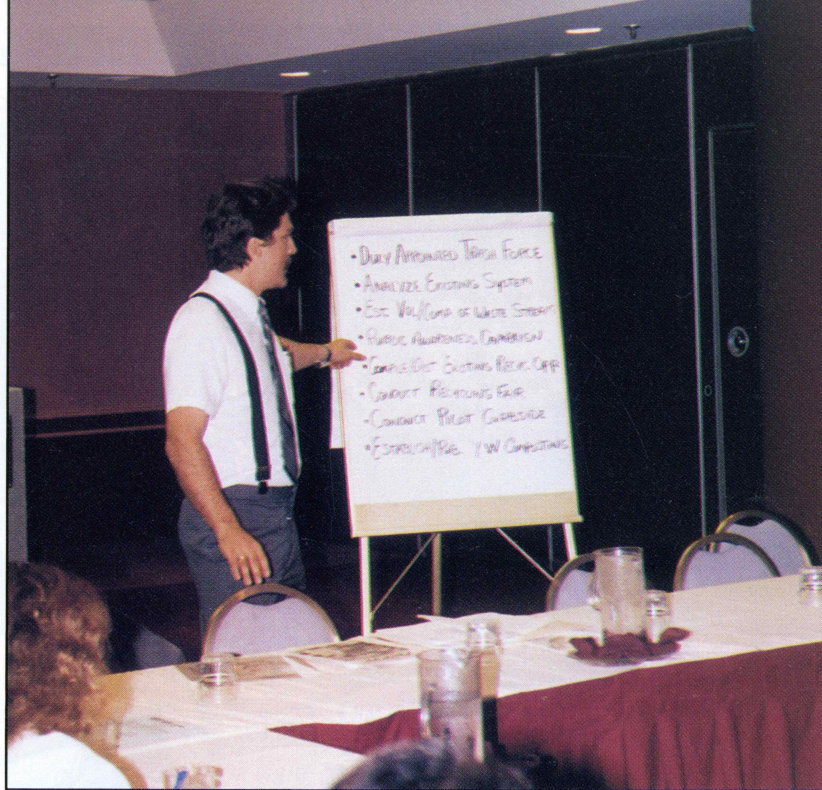
construction financing for those districts or communities receiving Environmental Protection Agency water and sewer grants or Farmers Home Administration loans and grants. These programs will be completed in this fiscal year and replaced by the SRF and private water and sewer financing programs.

Conferences and Seminars

Each year, as a part of its mission to educate and establish forums for discussion, the EIERA co-sponsors conferences and participates in several statewide meetings.

In an effort to blend economic interests with environmental concerns, the Conference on Partnerships for Economic Growth continues to be a key statewide meeting. The Authority contributed staff time to this conference which was attended by approximately 200 participants.

Solid Waste Solutions was a regional conference held in Springfield. This meeting was an effort to bring together



Drew Holt, solid waste management specialist for the Missouri Assistance Program (MAP), discusses planning and management strategies at a workshop attended by community leaders and local officials.



EIERA has provided financial assistance to the St. Louis-based Missouri Energy Resource Project (MERP). MERP develops projects to teach young people about recycling and energy conservation issues. In this photo, students are making recycled paper from old newspapers.

citizens, government officials, and waste management representatives to discuss and plan more efficient methods of solid waste management. The EIERA also contributed staff time to this effort.

The Missouri Waste Control Coalition (MWCC) is one of the most prominent environmental organizations in the state. Staff director, Stephen Mahfood, served as MWCC treasurer and chaired the awards committee. Staff member Kenneth Seeney chaired the publicity committee. Mahfood and Seeney were key planners for the 17th annual Missouri Waste Management Conference sponsored by the MWCC. The annual meeting, which attracted nearly 600 people, is one of the largest and most important environmental conferences in the Midwest.

This past year, staff director Stephen Mahfood led a Missouri delegation to the annual meeting of the National Recycling Coalition (NRC) in Charlotte, North

Carolina. This delegation received a letter of commitment from the NRC's Board of Director's to host the 1995 National Recycling Congress in Kansas City. The Congress is the largest convention in the United States devoted to recycling and waste reduction issues.

Staff Activities

The Authority and its staff have been involved in several activities to enhance environmental management and promote other interests that the EIERA supports.

The Authority and its staff have dedicated time and resources to implementing the recommendations of 1987 statewide solid waste study. This past year, with the passage of Senate Bill 530, several of the solid waste study's recommendations were enacted.

The staff director, Stephen Mahfood, also participated in several meetings of the Global Warming Task Force, chaired by

State Rep. Karen McCarthy. This committee is seeking a solution to global warming problems that could affect the state and region. The committee is also charged with developing a long-term energy plan for the state based on developing energy alternatives and promoting conservation efforts.

Other staff involvement included a wide range of activities:

1. Appointment of the director to several councils.
 - Anthony Commission on Public Finance
 - Board of the Midwest Recycling Coalition
 - Board of the Missouri Waste Control Coalition and Awards Committee Chairman
 - Chairman, Policy Task Force, Department of Natural Resources Strategic Planning Initiative

2. Staff participation in:

- National Recycling Coalition
- Great Lakes Recycling Officials
- National Waste Minimization Roundtable
- Consortium of Hazardous Waste Siting Authorities
- Women in Energy
- Public Relations Society of America (PRSA), and
- Mid-Missouri Chapter, PRSA
- National Association of Government Communicators

The Authority also received a Blue Pencil award from the National Association of Government Communicators (NAGC). The NAGC cited a two-page news release, drafted by staff member Kenneth Seeney, that summarized the findings and recommendations of the EI ERA's seven-volume solid waste management study.



EI ERA director Steve Mahfood chaired the Department of Natural Resources' Policy Task Force. This past year, strategic planning was one of the department's top priorities and addressing policy development was a major focus. The eight-member policy task force conducted research, formalized initiatives, and developed recommendations for department review.

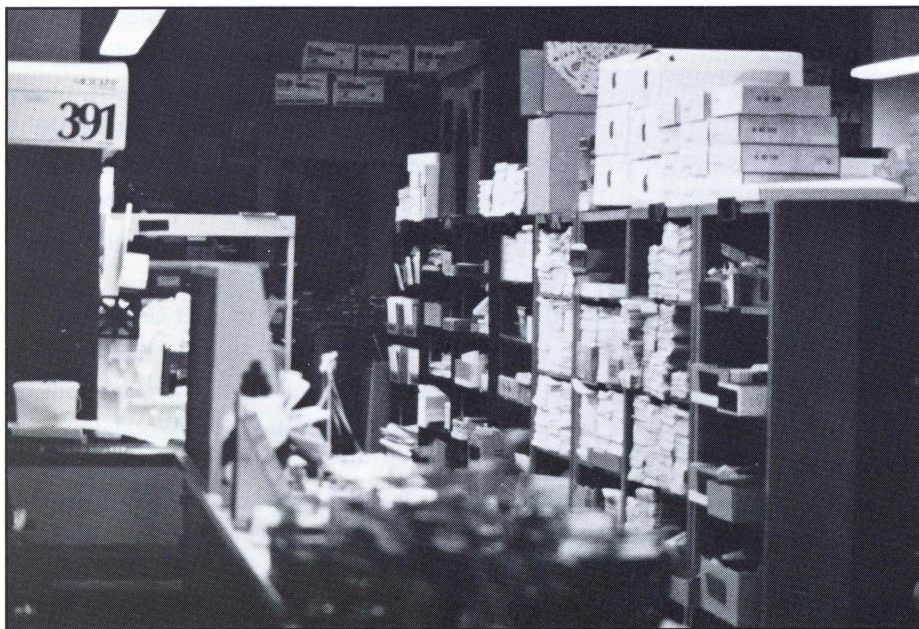
Upcoming Activities

In the coming year, the EI ERA will concentrate on reviewing or developing these projects:

- solid waste/resource recovery study implementation;
- development of innovative environmental financing programs;

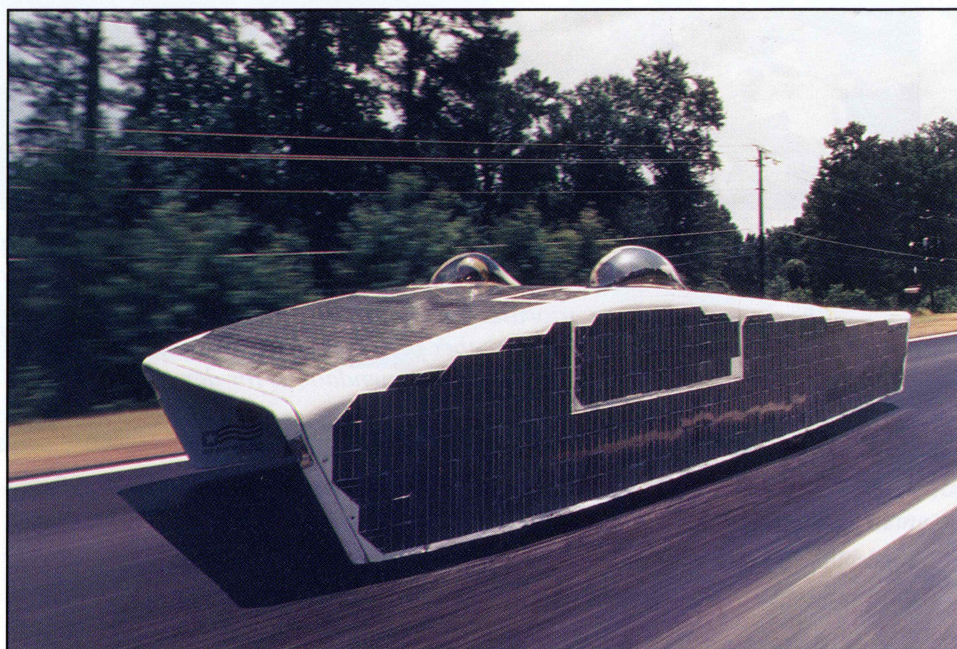
- implementation of the State Revolving Fund (SRF) program in cooperation with the Missouri Clean Water Commission;
- on-going development of the waste minimization/waste-exchange program;
- expansion of the household hazardous waste project;
- full implementation of the soil and water conservation demonstration project;
- implementation of a solid-waste financing program;
- implementation of a financial assistance program for private water and sewer companies;
- funding for a project to develop a solar-powered vehicle; and
- technical advice and information clearinghouse for rural communities to assist in the development of efficient wastewater treatment and solid-waste management projects.

These projects will form the core of EI ERA activities in the coming year. However, other projects may be initiated and developed as required.



The etc. Center develops educational materials and learning tools from trash and discarded items for the Springfield school district. In 1989, the center produced 600,000 items.

Super Solar Car



Crowder College received a \$52,000 EIERA grant to assist in the development of the STAR II solar car; this is the third solar-powered vehicle developed by Crowder.

Glistening in the sun, a sleek vehicle with space-age design glides down a country road at 30 miles an hour, powered only by the sun. This could be a scene on a test road near Detroit or a research site outside Los Angeles. It's not. It's Neosho, Missouri.

Neosho's Crowder College is nationally recognized for the development of solar-powered vehicles. The college has a student enrollment of 1,500.

This past year, the Environmental Improvement and Energy Resources Authority (EIERA) awarded a \$52,000 grant to Crowder to help meet operational and personnel costs in the construction of STAR II; STAR is an acronym for Solar Trans-American Racer.

"This project is important because it demonstrates the use of alternative forms of energy, promotes energy conservation, and is nationally recognized as an educational model," said William Clark, chairman of the EIERA.

STAR II is the third solar-powered vehicle built by the students and staff at Crowder. STAR II is 20 feet in length and, fully equipped, weighs 780 pounds; it can reach a maximum speed of 40 miles per hour.

In 1984, Crowder supported the development of Phoenix, the first solar-powered car to cross the United States; the Phoenix is now on permanent display at the Henry Ford Museum, near Detroit. In 1987, community volunteers, students, and staff, built the STAR vehicle. They entered the car in the World Solar Challenge, the first transcontinental race for solar-powered vehicles. The STAR raced across the Australian Desert and placed second among American entries and eighth overall.

This summer, STAR II is scheduled to enter General Motors' GM Sunrayce, the first trans-American solar car race. More than 31 colleges and universities will race 1,800 miles from Lake Buena Vista, Florida, near Walt Disney World, to Warren, Michigan.

EIERA officials noted that funding for some experimental projects is not always readily available. "Normally, corporate sponsors will provide monies for construction costs on these projects," said Dwight Douglas, EIERA vice chairman. "But officials at Crowder College were experiencing difficulty in locating funds for operational and personnel expenses. The EIERA was able to assist in this area."

Missouri Improves Its Solid Waste Management System

Through the passage of Senate Bill 530, Missouri legislators set aside monies to develop recycling markets. These funds may be used to encourage new businesses to relocate to Missouri that manufacture products made from recycled materials. Also, assistance may be provided to existing businesses to expand an operation that utilizes recycled materials in the manufacturing process.

The Missouri Environmental Improvement and Energy Resources Authority (EIERA) played a major role in the passage of Senate Bill 530.

"This bill establishes a management system for solid waste," said William Clark, EIERA chairman. "This legislation is something we have needed and Missouri is definitely taking a forward approach."

EIERA's Resource Recovery Planning and Feasibility Study, published in 1987, listed 18 recommendations that needed to be implemented to improve Missouri's solid waste management system and increase its potential for resource recovery activities. The seven-volume study also provided policy statements and statistics; this information was incorporated into key provisions of this important bill.

Also, the Authority's director submitted information and testified before the Energy and Environment Committees in both the Missouri House and Senate.

Senate Bill 530 addressed a variety of issues: reduce solid waste 40 percent statewide by 1998, develop solid waste districts, establish landfill taxes, prosecute illegal dumpers, and ban yard waste, batteries, and tires from landfills.

The most interesting aspect of the bill is the \$1.50 tax collected for each ton of trash dumped at landfills. State officials estimate that the tax will generate \$5 to \$7 million annually.

"Each year, one million dollars of the monies collected are earmarked to develop markets for recycled materials," Clark said. "These funds will be available for the next five years." Clark emphasized that recycling efforts must coincide with the purchase of products made with recycled materials.

The EIERA, the Department of Natural Resources, and the Department of Economic Development will develop the funding mechanism and determine which projects receive monies for market development initiatives beginning in fiscal year 1992.

A cylinder of processed paper rolls off a production line at the U.S. Gypsum plant in Kansas City; this paper was made from old newspapers and waste paper and is used in the manufacture of wallboard.



EIERA Programs and Financial Services



This is an example of the type of bond issued by the EIERA.

The Environmental Improvement and Energy Resources Authority assists Missouri communities, as well as public and private companies, in financing projects at the lowest possible cost. To meet this objective, the Authority's mandate is broad and includes financing projects through tax-exempt bonds, conducting studies, and providing technical assistance.

The EIERA can offer assistance through several types of tax-exempt and taxable financing; these programs are regulated by federal and state laws and may consist of the following:

- Issuance of Commercial Paper;
- Issuance of Floating or Fixed-Rate Notes;
- Issuance of Short- to Intermediate-Term Bonds;
- Issuance of Long-Term Bonds;
- Pooled Financings; and
- Issuance of Taxable Bonds.

The EIERA also provides low-cost construction financing for water- and wastewater-treatment facilities and sanitary sewer projects that expect to receive funds from the U.S. Environmental Protection Agency (EPA) or Farmer's Home Administration.

Also, in cooperation with EPA, and other state agencies, the EIERA has developed a State Revolving Fund (SRF). The SRF will replace several EPA direct-loan programs and provide monies to communities and districts for construction of wastewater and sewage-treatment projects.

The EIERA continues to develop alternative financing methods, provide direct loans for feasibility studies, and issue small project grants. Along with direct financial assistance provided at the state level, Missouri's application of the sales/use tax exempts all air- and water-pollution control machinery and equipment from sales/use tax liabilities.

In addition to the state's efforts to reduce the cost of environmental compliance, Missouri's private financial institutions are encouraged to give special consideration to loans for pollution-control equipment, facilities, and projects.

Projects Financed in Fiscal Year 1990

Bond or Bond-Related Financings

	<u>Location</u>	<u>Amt. Financed</u>
Union Electric Refunding	St. Louis, MO	\$60,000,000
TOTAL:		<u>\$60,000,000</u>

Other Project Financings and Assistance

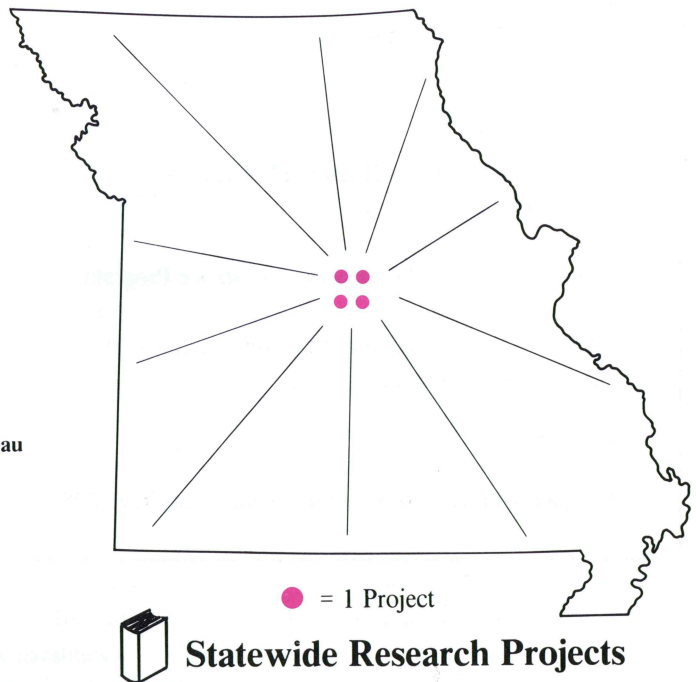
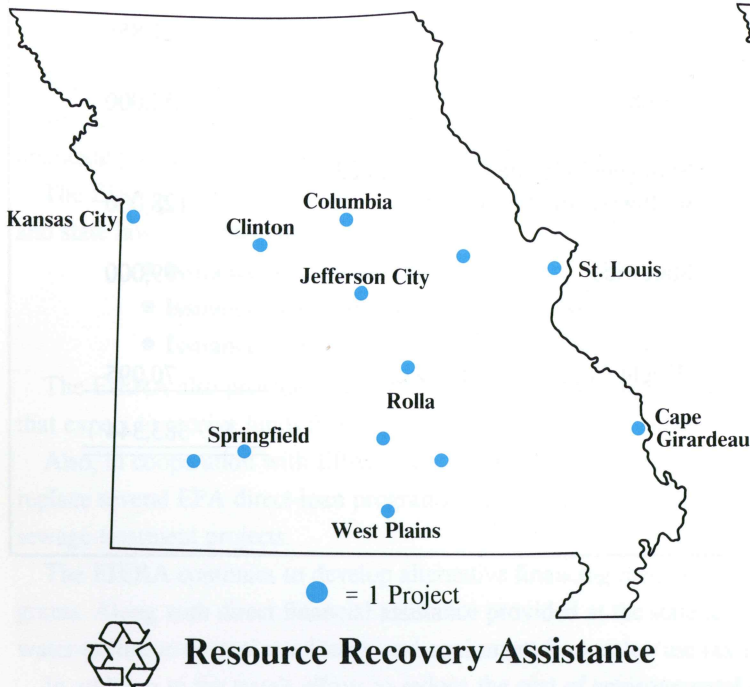
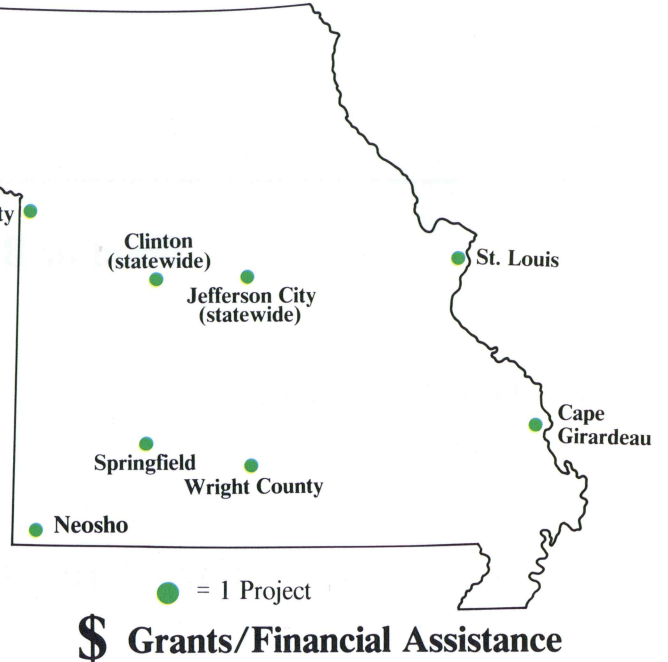
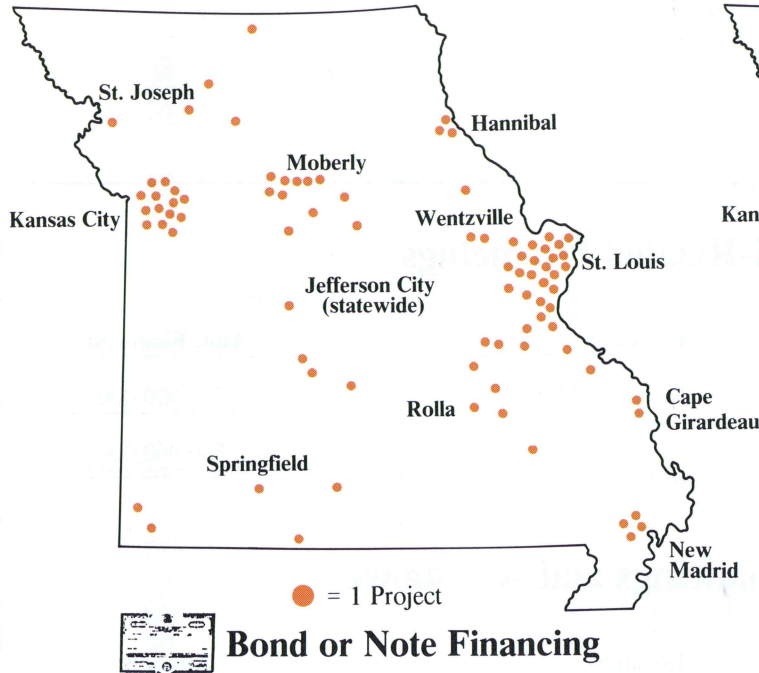
	<u>Location</u>	<u>Amount</u>
*Missouri Energy Resource Project	Statewide	\$ 12,391
*Solid Waste Information System	Statewide	21,858
Crowder College	Neosho	52,000
Project Grants to the Household Hazardous Waste Project	Springfield-Greene County and 23 southwest-Missouri counties	128,000
Project Grants to the Missouri Assistance Program	Statewide	99,000
*Project Grants to the Wright County Soil and Water Conservation District	Wright County and Statewide	<u>70,095</u>
TOTAL:		<u>\$ 383,344</u>

*Project continues to be funded from Fiscal Year 1989

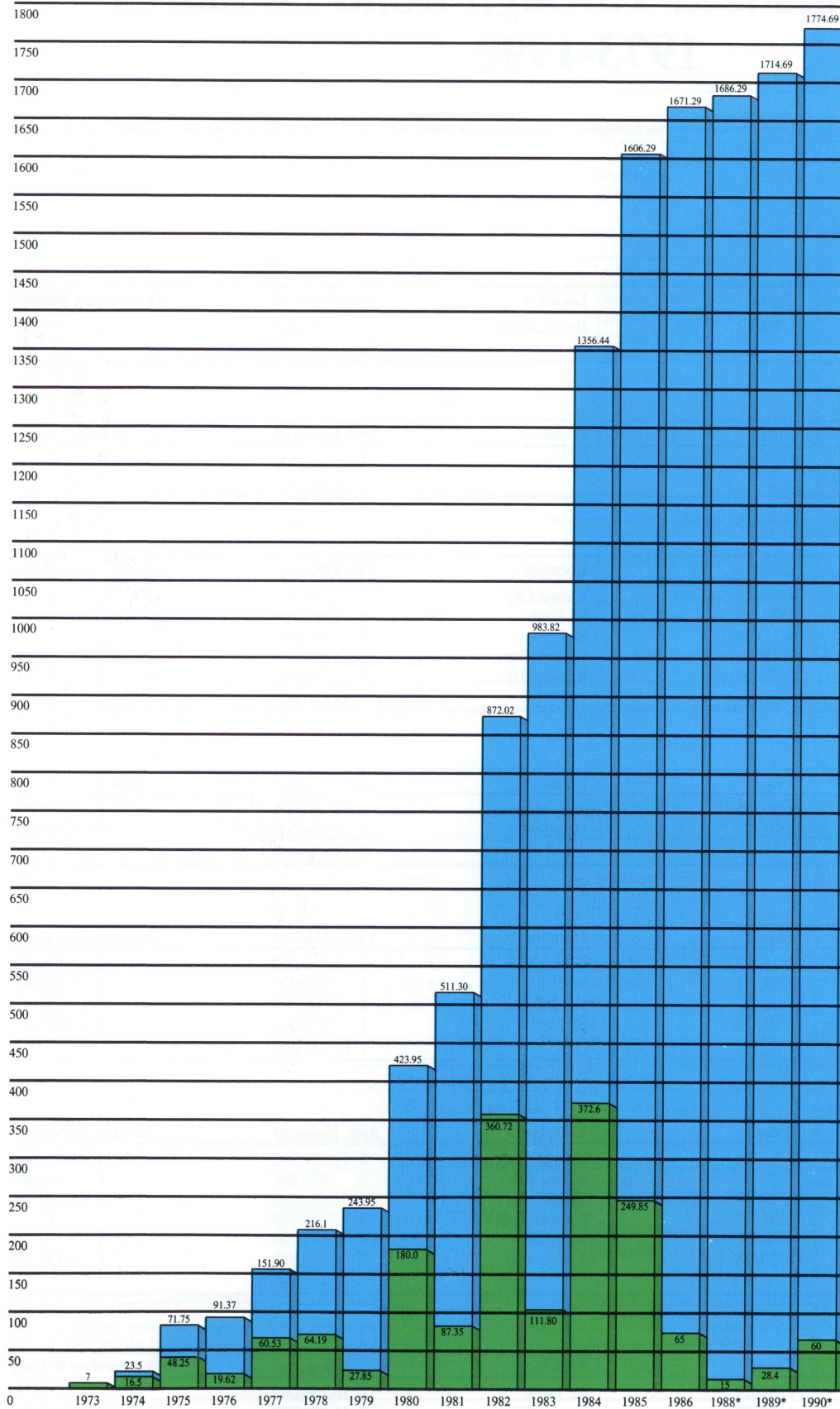
Geographical Locations of Projects Financed

Key

- Bond or Note Financing
- Grants/Financial Assistance
- Resource Recovery Assistance
- Statewide Research Projects



(\$ millions)



Summary of Bond Issuances

Key

- Annual Figures
- Cumulative Totals

* Encompasses Fiscal Year July 1, 1989 through June 30, 1990

Projects Financed Through Bond Issuances 1973-1990

1973

Project	Closed	Location	Amt. Financed	Outstanding Balance
St. Joe Minerals Corp.	12/20/73	Herculeum	\$ 7,000,000	\$ 6,470,000
TOTAL:			\$ 7,000,000	

1974

Project	Closed	Location	Amt. Financed	Outstanding Balance
Union Electric Co.	4/25/74	St. Louis	\$ 16,500,000	—0—
TOTAL:			\$ 16,500,000	

1975

Project	Closed	Location	Amt. Financed	Outstanding Balance
Mobay Chemical Corp.	4/18/75	Kansas City	\$ 7,500,000	—0—
Alpha Portland Industries, Inc.	4/29/75	St. Louis	\$ 1,900,000	—0—
Union Electric Co.	6/11/75	St. Louis	\$ 22,000,000	—0—
Mobay Chemical Corp.	9/11/75	Kansas City	\$ 3,500,000	—0—
Armco Corp.	12/17/75	Kansas City	\$ 13,350,000	\$ 13,350,000
TOTAL:			\$ 48,250,000	

1976

Project	Closed	Location	Amt. Financed	Outstanding Balance
Noranda Aluminum Co.	4/27/76	New Madrid	\$ 10,500,000	\$ 10,500,000
American Cyanamid Co.	12/01/76	Hannibal	\$ 9,120,000	\$ 9,120,000
TOTAL:			\$ 19,620,000	

1977

Project	Closed	Location	Amt. Financed	Outstanding Balance
Standard Oil (AMOCO) Co.	2/16/77	Kansas City	\$ 6,450,000	\$ 6,400,000
Great Lakes Carbon Corp.	9/14/77	St. Louis	\$ 7,000,000	\$ 5,920,000
Kansas City Power & Light Co.	10/26/77	Kansas City	\$ 20,000,000	\$ 20,000,000
Union Electric Co.	11/01/77	St. Louis	\$ 27,085,000	\$ 27,085,000
TOTAL:			\$ 60,535,000	

1978

Project	Closed	Location	Amt. Financed	Outstanding Balance
Mobay Chemical Corp.	3/15/78	Kansas City	\$ 11,000,000	\$ 11,000,000
Mobay Chemical Corp.	5/10/78	Kansas City	\$ 825,000	\$ 825,000
Kansas City Power & Light Co.	7/19/78	Kansas City	\$ 31,000,000	\$ 31,000,000
Gulf+Western Industries, Inc.	8/01/78	Cape Girardeau	\$ 11,000,000	—0—
Monsanto Co.	8/3/78	St. Louis	\$ 2,370,000	\$ 2,370,000
Empire District Electric Co.	12/20/78	Kansas City	\$ 8,000,000	\$ 8,000,000
TOTAL:			\$ 64,195,000	

1979

Project	Closed	Location	Amt. Financed	Outstanding Balance
Monsanto Co.	1/09/79	St. Louis	\$ 10,250,000	\$ 10,250,000
Mobay Chemical Corp.	4/18/79	Kansas City	\$ 11,000,000	\$ 11,000,000
American Cyanamid Co.	8/30/79	Hannibal	\$ 3,700,000	\$ 3,700,000
Monsanto Co. (Queeny Plant)	9/06/79	St. Louis	\$ 2,900,000	\$ 2,900,000
TOTAL:			\$ 27,850,000	

1980

Project	Closed	Location	Amt. Financed	Outstanding Balance
Associated Electric Cooperative, Inc.	1/20/80	Thomas Hill	\$ 95,000,000	—0—
Alpha Portland Industries, Inc.	4/29/80	St. Louis	\$ 1,450,000	—0—
River Cement Co.	5/29/80	Festus	\$ 5,700,000	—0—
Standard Oil (AMOCO) Co.	7/22/80	Kansas City	\$ 8,300,000	\$ 8,300,000
Great Lakes Container Corp.	7/24/80	St. Louis	\$ 800,000	\$ 580,000
Union Electric Co.	8/20/80	St. Louis	\$ 60,000,000	\$ 60,000,000
American Cyanamid Co.	9/17/80	Hannibal	\$ 3,450,000	\$ 3,450,000
St. Joseph Light & Power Co.	12/30/80	St. Joseph	\$ 5,300,000	—0—
TOTAL:			\$180,000,000	

1981

Project	Closed	Location	Amt. Financed	Outstanding Balance
Associated Electric Cooperative, Inc.	3/19/81	New Madrid	\$ 36,000,000	—0—
City of Wentzville (GM Plant)	5/08/81	Wentzville	\$ 6,350,000	\$ 6,350,000
Union Electric Co.	10/08/81	St. Louis	\$ 45,000,000	—0—
TOTAL:			\$ 87,350,000	

1982

Project	Closed	Location	Amt. Financed	Outstanding Balance
Associated Electric Cooperative, Inc.	1/02/82	Thomas Hill	\$ 71,000,000	—0—
Associated Electric Cooperative, Inc.	2/21/82	Thomas Hill	\$ 50,000,000	—0—
Associated Electric Cooperative, Inc.	5/04/82	Thomas Hill	\$ 73,000,000	—0—
Associated Electric Cooperative, Inc.	8/18/82	Thomas Hill	\$ 12,000,000	—0—
Noranda Aluminum, Inc.	10/29/82	New Madrid	\$ 45,000,000	\$ 45,000,000
Union Electric Co.	12/15/82	St. Louis	\$ 20,000,000	—0—
Monsanto Co.	12/15/82	St. Louis	\$ 9,325,000	—0—
Associated Electric Cooperative, Inc.	12/16/82	Thomas Hill	\$ 55,900,000	—0—
Grant Anticipation Notes, 1982	12/16/82	various locations	\$ 24,500,000	—0—
TOTAL:			\$360,725,000	

1983

Project	Closed	Location	Amt. Financed	Outstanding Balance
St. Joseph Light & Power Co.	2/24/83	Kansas City	\$ 5,600,000	\$ 5,600,000
Community Development Program, 1983	10/27/83	various municipalities	\$ 18,000,000	—0—
Grant Anticipation Notes, 1983	11/17/83	various municipalities	\$ 44,100,000	—0—
Associated Electric Cooperative, Inc.	11/15/84	New Madrid	\$ 44,100,000	\$ 44,100,000
TOTAL:			\$111,800,000	

1984

Project	Closed	Location	Amt. Financed	Outstanding Balance
Union Electric Co.	6/21/84	St. Louis	\$160,000,000	\$160,000,000
Lone Star Industries, Inc.	7/17/84	Cape Girardeau	\$ 9,100,000	\$ 9,100,000
Monsanto Co.	11/08/84	St. Louis	\$ 2,890,000	\$ 2,890,000
Union Electric Co.	11/14/84	St. Louis	\$ 47,500,000	\$ 47,500,000
Associated Electric Cooperative, Inc.	12/15/84	Thomas Hill	\$153,125,000	\$149,120,000
TOTAL:			\$111,800,000	

1985

Project	Closed	Location	Amt. Financed	Outstanding Balance
Union Electric Co.	4/24/85	St. Louis	\$126,500,000	\$126,500,000
Community Development Program, 1985	6/11/85	various municipalities	\$ 15,000,000	—0—
Grant Anticipation Notes, 1985	7/09/85	various municipalities	\$ 90,000,000	—0—
Chrysler Corp.	10/30/85	St. Louis	\$ 16,000,000	\$ 16,000,000
Mobay Chemical Corp.	12/05/85	Kansas City	\$ 1,600,000	\$ 1,600,000
Reynolds Metals Co.	12/31/85	Kansas City	\$ 750,000	\$ 750,000
TOTAL:			\$249,850,000	

1986

Project	Closed	Location	Amt. Financed	Outstanding Balance
Grant Anticipation Notes, 1986	7/15/86	various municipalities	\$ 65,000,000	—0—
TOTAL:			\$ 65,000,000	

1988

Project	Closed	Location	Amt. Financed	Outstanding Balance
Community Development Note Program, 1988	6/15/88	various municipalities	\$ 15,000,000	\$ 15,000,000
Monsanto Company	11//02/88	St. Louis	\$ 7,950,000	\$ 7,950,000
TOTAL:			\$ 22,950,000	

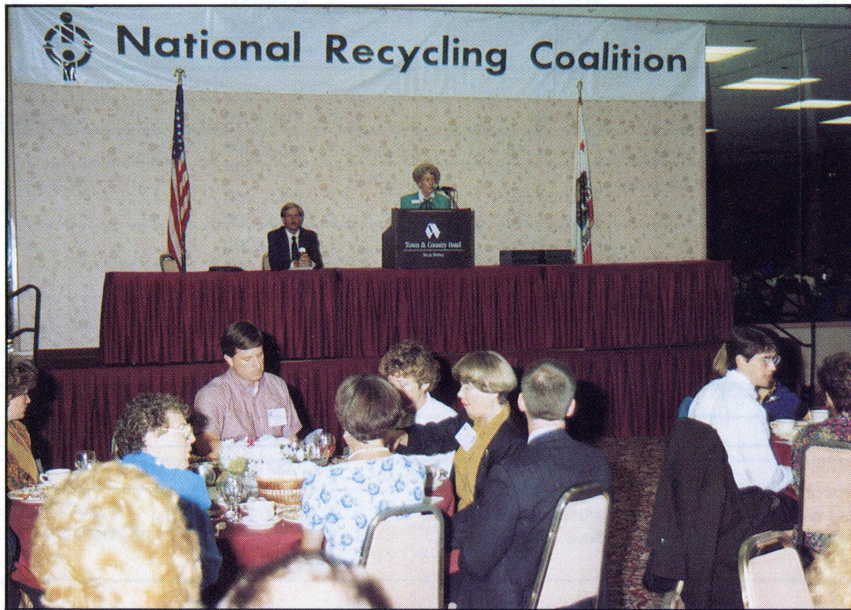
1989

Project	Closed	Location	Amt. Financed	Outstanding Balance
Grant Anticipation Notes, 1989	3/02/89	various municipalities	\$ 14,850,000	\$ 14,850,000
St. Joseph Light & Power Co.	7/21/89	St. Joseph	\$ 5,600,000	\$ 5,600,000
TOTAL:			\$ 20,450,000	

1990

Project	Closed	Location	Amt. Financed	Outstanding Balance
Union Electric Co.	3/03/90	St. Louis	\$ 60,000,000	\$ 60,000,000
TOTAL:			\$ 60,000,000	

Kansas City Selected for National Recycling Conference



The National Recycling Coalition is a 3,000-member organization that is affiliated with 20 state associations. Annually, it sponsors the National Recycling Congress, the largest conference in the United States devoted to recycling and waste reduction issues.

In October 1989, Steve Mahfood, director of the Missouri Environmental Improvement and Energy Resources Authority (EIERA), led a delegation to Charlotte, North Carolina, site of the annual meeting of the National Recycling Coalition (NRC).

The Missouri delegation included State Rep. Patrick Dougherty; Carolyn McClure, Kansas City Convention Square Hotel Group; Darryl Henderson, Kansas City Convention and Visitors Bureau; and Tom Welch, EIERA.

Mahfood and other members of the delegation gave an outstanding presentation before the NRC board of directors. After consultation with the NRC staff, the board of directors presented a letter of commitment to the Missouri delegation to host the 1995 National Recycling Congress.

The National Recycling Congress, sponsored by the National Recycling Coalition, is the largest convention in the United States devoted to recycling and waste reduction issues. Approximately 2,000 delegates attended the meeting in Charlotte and 140 exhibits were on display.

"This is an excellent opportunity for the state of Missouri and the Midwest. Companies, agencies, and businesses will have a national forum to report the progress we have made toward establishing recycling programs," said William Clark, EIERA chairman. "We are looking forward to working with the NRC

and we have already begun preparations for this important conference."

The EIERA is the primary coordinating agency for the 1995 conference. The national meeting will be held at H. Roe Bartle Hall and Convention Center. Bartle Hall will be expanded in 1991 and upon completion in 1993, will increase its exhibit space to 400,000 square feet. More than 2,500 delegates are expected to attend the Kansas City conference and 200 exhibits will be on display.

During the past year, the EIERA held meetings with Kansas City officials and representatives of the Kansas City Convention and Visitors Bureau. Several planning sessions are scheduled in the coming year to coordinate hotel arrangements, meeting rooms, local attractions, and transportation and parking facilities.

The NRC was established in 1978 and held its first convention in 1980 in Fresno, California. It boasts 3,000 members and is affiliated with 20 state associations, including the Missouri State Recycling Association. Annually, the NRC sponsors a scholarship program for college students and an awards program that recognizes projects that promote and enhance environmental management.

The NRC's 1990 conference will be held in San Diego and the 1991 site will be Milwaukee.



Greer Spring is the second largest spring in the Missouri Ozarks and it has an average daily discharge of 218 million gallons. The crisp, clean waters provide a major portion of the flow for the Eleven Point River.

Missouri Department of Natural Resources

State Environmental Improvement and Energy Resources Authority

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